UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,719	01/17/2002	Satoshi Hasegawa	M2082.0000/P000	3594

7590 04/24/2006	EXAMINER
Steven I Weisburd Esq	HARPER, V PAUL
Dickstein Shapiro Morin & Oshinsky LLP	

ART UNIT	PAPER NUMBER
2626	

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New York, NY 10036-2714

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 March 2006</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   The Examiner has considered the references listed in the Information Disclosure

Statement dated 4/10/2006.   A copy of the Information Disclosure Statement is

attached to this office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.   .
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Applicant's failure to adequately traverse the Examiner's taking of Official Notice

in the last office action is taken as an admission of the fact(s) noticed, and thus those

facts will henceforth be labeled as Applicant's Admitted Prior Art (AAPA).

3.   Claims 1-9, 13, 14, and 16-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over ISO/IEC 11172-3 (as described in the prior art section of the

specification, p. 2, Fig. 1 labeled prior art), hereinafter referred to as *Spec_Prior_Art*, in

view of Nakajima et al. ("A Fast Audio Classification from MPEG Coded Data" ICASSP

'99, vol. 6, May 1999) hereinafter referred to as Nakajima.

Regarding **claim 1**, *Spec_Prior_Art* describes the MPEG1/Audio layer 1 system

and includes the following:

- a subband dividing section dividing inputted audio information including a sound

signal into a plurality of frequency bands (p. 2, line 15, Fig. 1, item 111);

- a scaling section calculating a scaling factor, which indicates a multiplying power

to a reference value, of each subband divided by the subband dividing section into

each of the frequency bands, and aligning each dynamic range (Fig. 1, item 112); and

- a coding processing section compressing and coding an output signal from the

scaling section by using a MPEG system to output as coded bit stream data (Fig. 1,

items 113-115).

But *Spec_Prior_Art* does not specifically teach "further including a feature

detection processing section extracting features of the audio information on the basis of

the scaling factors outputted from the scaling section." However, the examiner contends

that this concept was well known in the art, as taught by Nakajima.

In the same field of endeavor, Nakajima teaches a method for audio classification

from MPEG coded data, by processing the sub-band energy levels (§2, the scaling

factors necessarily correspond to sub-band energy levels).

Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify *Spec_Prior_Art* by specifically providing the

features, as taught by Nakajima, because it is well known in the art at the time of

invention for the purpose of identifying the content of the audio signal being processed

for marketing, monitoring commercials, improved speech recognition (Kenyon et al. U.S.

Patent 4,843,562, col. 1), and indexing, browsing, and retrievals from multimedia

databases (Nakajima, §1, ¶1).

Regarding **claim 2**, *Spec_Prior_Art* in view of Nakajima teaches everything

claimed, as applied above (see claim 1). In addition Nakajima teaches "the feature

detection processing section includes a means of determining whether or not the audio

information is of a voice signal interval on the basis of the scaling factors" (§1, ¶4,

classified into speech; §2.2, "Music/Speech Characteristics" based on the distribution

of energy; Fig. 1 and 2, n.b., the amplitude of each histogram corresponds to a sub-

band level).

Regarding **claim 3**, *Spec_Prior_Art* in view of Nakajima teaches everything

claimed, as applied above (see claim 1). In addition, Nakajima teaches "wherein the

feature detection processing section includes a means of determining whether or not

the audio information is of a soundless signal interval on the basis of the scaling

factors" (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 4**, this claim has corresponding limitations similar to the

limitations in claim 1, and those limitations are rejected for the same reasons. In

addition: "a signal level calculating section inputting thereto the scaling factor of each

subband outputted from the scaling section, and calculating a signal level

corresponding to the scaling factor; wherein the feature detection processing section

extracts features of the audio information on the basis of the signal levels calculated by

the signal level calculating section" (§2, "Classification Algorithm" Figs. 1 and 2; the

amplitude of each histogram corresponds to a scaled sub-band level where this

information is used during feature detection).

Regarding **claim 5**, *Spec_Prior_Art* in view of Nakajima teaches everything

claimed, as applied above (see claim 4). In addition, Nakajima teaches:

- the signal level calculating section inputs thereto the scaling factors in low-

frequency bands outputted from the scaling section within a predetermined period of

time to calculate the signal levels (§2, "Classification Algorithm" ; §2.1, ¶'s 1 and 2, low

frequency; over segment implies a predetermined interval); and

- the feature detection processing section comprises: a calculating means of

finding a maximum value and a minimum value of the signal levels calculated by the

signal level calculating section (§2, certain level of variation; requires the determination

of min/max--range), and

- calculating a difference between the maximum value and the minimum value (§2,

variation); and

- a determining means of, when the difference value calculated by the calculating

means is greater than or equal to a predetermined threshold value, determining that

the audio information is of a voice signal interval, on the other hand, when the

difference value is less than the threshold value, determining that the audio information

is of a signal interval except for voice (§2, silence, if σ^2 is smaller than the predetermined threshold, otherwise the audio information is evaluated for speech, etc).

Regarding **claim 6**, *Spec_Prior_Art* in view of Nakajima teaches everything claimed, as applied above (see claim 4). In addition, Nakajima teaches:

- the signal level calculating section inputs thereto all of the scaling factors outputted from the scaling section within a predetermined period of time to calculate the signal levels (§1, from MPEG coded data; see Figs, 1 and 2); and

- the feature detection processing section includes a determining means of, when the signal levels calculated by the signal level calculating section are greater than or equal to a predetermined threshold value (§2, silence if σ^2 is smaller than the predetermined threshold, otherwise the audio information is evaluated for speech, etc),

- determining that the audio information is of a sound signal interval (§2.2 "Music/Speech Characteristics", not silence),

- on the other hand, when the signal levels are less than the threshold value, determining that the audio information is of a soundless signal interval (§2, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 7**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 8**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 9**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 13**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 14**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 16**, this claim has limitations similar to claim 4 and is rejected for the same reasons.

Regarding **claim 17**, this claim has limitations similar to claim 5 and is rejected for the same reasons.

Regarding **claim 18**, this claim has limitations similar to claim 6 and is rejected for the same reasons.

Regarding **claim 19**, this claim has limitations similar to claim 7 and is rejected for the same reasons.

Regarding **claim 20**, this claim has limitations similar to claim 8 and is rejected for the same reasons.

Regarding **claim 21**, this claim has limitations similar to claim 9 and is rejected for the same reasons.

4.   Claims 10-12, 15, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Spec_Prior_Art* in view of Nakajima and AAPA.

Regarding **claim 10**, *Spec_Prior_Art* describes the encoding portion of ISO/IEC 11172-3, but does not specifically describe "a stream dividing section, after inputting thereto bit stream data coded by a MPEG system, dividing the coded bit stream data composed of each subband divided into each frequency band into bit assigning information, scaling factor value indicating a multiplying power to a reference value, and coded data in units of each subband; and a decoding processing section executing a decoding process to the coded data divided by the stream dividing section in units of each subband to output as audio information." However, AAPA teahes the fact that the use of a decoder for the purpose of decoding data encoded according to ISO/IEC 11172-3 was well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify *Spec_Prior_Art* such that a decoder is implemented, because a decoder is part of the ISO/IEC 11172-3 specification and required for the complete processing of the signal.

In addition, *Spec_Prior_Art* does not specifically teach:

- a feature detection processing section extracting features of the audio information on the basis of the scaling factor values outputted from the stream dividing section; and

- a signal level calculating section inputting thereto the scaling factor of each subband outputted from the stream dividing section to calculate a signal level;

- wherein the feature detection processing section extracts features of the audio information on the basis of the signal levels calculated by the signal level calculating section.

However, the examiner contends that these concepts were well known in the art, as taught by Nakajima.

In the same field of endeavor, Nakajima teaches a method for audio classification from MPEG coded data, where Nakajima processes the sub-band energy levels (§2, where the scaling factors necessarily correspond to sub-band energy levels since Nakajima is processing sub-band energy levels) and performs classification (§2, silence, speech, etc.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify *Spec_Prior_Art* by specifically providing the

features, as taught by Nakajima, because it is well known in the art at the time of

invention for the purpose of identifying the content of the audio signal being processed

for marketing, monitoring commercials, improved speech recognition (Kenyon et al. U.S.

Patent 4,843,562, col. 1), and indexing, browsing, and retrievals from multimedia

databases (Nakajima, §1, ¶1).

Regarding **claim 11**, *Spec_Prior_Art* in view of Nakajima and well known prior

art teaches everything claimed, as applied above (see claim 10). In addition, Nakajima

further teaches :

- the signal level calculating section inputs thereto the scaling factors in low-
frequency bands outputted from the stream dividing section within a predetermined

period of time to calculate the signal levels (§2, "Classification Algorithm" most of the

sub-band energy is confined to the lower sub-bands and variations are compared);

and

- the feature detection processing section comprises: a calculating means of

finding a maximum value and a minimum value of the signal levels calculated by the

signal level calculating section (§2, variation is determined), and

- calculating a difference between the maximum value and the minimum value (§2,

variation is determined with a necessary calculation of min/max difference); and

- a determining means of, when the difference value calculated by the calculating

means is greater than or equal to a predetermined threshold value, determining that

the audio information is of a voice signal interval, on the other hand, when the

difference value is less than the threshold value, determining that the audio information is of a signal (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 12**, *Spec_Prior_Art* in view of Nakajima and well known prior art teaches everything claimed, as applied above (see claim 10). In addition, Nakajima further teaches:

- the signal level calculating section inputs thereto all of the scaling factors outputted from the stream dividing section within a predetermined period of time to calculate the signal levels (§2, time and frequency analysis, frames in one second); and

- the feature detection processing section includes a determining means of, when the signal levels calculated by the signal level calculating section are greater than or equal to a predetermined threshold value (§2.1, silence if σ^2 is smaller than the predetermined threshold);

- determining that the audio information is of a sound signal interval (§2, §2.1, "Silence Segment Detection" if not silence necessarily "sound"),

determining that the audio information is of a sound signal interval, on the other hand, when the signal levels are less than the threshold value, determining that the audio information is of a soundless signal interval (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 15**, this claim has limitations similar to claim 3 and is rejected

for the same reasons.

Regarding **claim 22**, this claim has limitations similar to claim 10 and is rejected

for the same reasons.

Regarding **claim 23**, this claim has limitations similar to claim 11 and is rejected

for the same reasons.

Regarding **claim 24**, this claim has limitations similar to claim 12 and is rejected

for the same reasons.

Response to Arguments

5.   Applicant's arguments filed 4/10/2006 have been fully considered but they are

not persuasive.

6.   Applicant asserts on page 3:

> According to the present invention, a feature detection processing
> section determines whether or not signal levels acquired at the signal-
> calculating section are less than or more than a predetermined threshold
> value. This feature detection process regards the sound signal interval
> and outputs a parameter as a sound signal interval. *When the signal
> levels are less than the threshold value for one or more seconds, the
> feature detection processing section regards the interval as a soundless
> signal interval and outputs a parameter C as the soundless signal interval.
> This feature detection is not disclosed in Nakajima.* (Italics added)

In response to applicant's argument that the references fail to show certain

features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., less than the threshold value for one or more seconds, ...) are not recited in the

rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7.   Applicant asserts on page 4:

> In Nakajima, MPEG compression is used to compress the audio
> stream. Three modules are used, a sub-filtering module, a psychoacoustic
> evaluation module and a bit allocation and frame packing module. The
> sub-band filtering module resolves the audio signal into special
> components or sub-bands of 32 equal width sub-bands. Each of these
> bands is sampled. For each 32 data samples, one output is produced for
> each of the 32 sub-bands. Next, acoustically irrelevant pads of the audio
> signal are removed. There is one psychoacoustic valuation per each
> frame of audio data. The audio data is masked using this evaluation which
> is then passed on to the encoder for bit allocation. In the bit allocation and
> frame packing module, the noise masking threshold is utilized for bit
> allocation for each of the audio frames in the sub-band. Each sub-band
> gets a different bit allocation depending on the noise masking threshold.
> *However, at no time does Nakajima disclose utilizing a feature detection
> processing section based on scaling as explicitly recited in Applicant's
> claim.* Therefore, Applicant respectfully submits that Nakajima fails to cure
> the deficiency in the admitted prior art noted in the Office Action. (Italics
> added).

Nakajima teaches a classification algorithm (p. 3005, Section 2) where the

energy levels [scaled values] of the sub-bands are used during the classification

(Section 2, *sb* represents the sub-band energy levels, where features such as silence,

music, speech and applause are detected). Thus, as claimed, Nakajima teaches "a

feature detection processing section extracting features of the audio information on the

basis of the scaling factors outputted from the scaling section."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to V. Paul Harper whose telephone number is (571) 272-

7605. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

4/18/2006

V. Paul Harper
Patent Examiner
Art Unit 2626